Staff Summary
Method 2B Application

Applied Natural Gas Fuels, Inc.
McCarty Road Landfill Gas (Houston, Texas) to Liquefied Natural Gas and Liquefied-Compressed Natural Gas Delivered in California
(Pathway Codes: LNG027 and CNG034)

Deemed Complete Date: May 8, 2015
Posted for Comments Date: May 28, 2015
Certified Date: June 17, 2015

Pathway Summary

Applied Natural Gas Fuels (ANGF) has applied for two landfill-gas-to-biomethane fuel pathways. The landfill gas (LFG) for both pathways is extracted from the McCarty Road Landfill in Houston, Texas. The McCarty Road Landfill LFG Recovery Facility is owned by GSF Energy, LLC. One pathway covers the liquefaction of the resulting biomethane at ANGF Topock, Arizona liquefaction facility and the dispensing of the fuel as liquefied natural gas (LNG); the other pathway covers the liquefaction of the resulting biomethane at ANGF Topock, Arizona liquefaction facility and the subsequent vaporization and compression of the liquefied natural gas into compressed natural gas (L-CNG). All fueling stations covered by these pathways are located in California.

LFG from the McCarty Road Landfill is cleaned up using grid electricity and natural gas. Natural gas is used in the compressor, thermal oxidizer, and flare pilot. The thermal oxidizer and flare are used to destroy LFG when the processing plant is not fully operational.

The ANGF pathway utilizes the CA-GREET1.8b default values for LFG recovery and L/CNG conversion. To determine combustion emissions from the consumed natural gas, the flare and the thermal oxidizer, the CA-GREET1.8b default values for natural gas combustion in a turbine were used. These emissions factors are more representative of operations at the McCarty Road Landfill plant than are the emission factors for a compressor powered by a natural gas engine.

The biomethane ANGF purchases from the McCarty LFG processing plant is injected into the interstate pipeline system for conveyance to ANGF plant in Topock, Arizona. The pipeline transport distance is 1,365 miles. As such, ANGF will be obligated to retain records that unequivocally demonstrate that the credits it earns under the pathways described in this Summary correspond directly with the volumes of biomethane it purchases from the McCarty Road Landfill in Houston, Texas.

Carbon Intensity of CNG and L-CNG Produced

As shown in table below, the applicant has calculated the CIs of its LNG and L-CNG pathways to be 27.45 and 27.85 gCO_2e/MJ, respectively.

Proposed Lookup Table Entries

Fuel	Pathway Identifier	Pathway Description	Carbon Intensity Values (gCO_2e/MJ)		
			Direct Emissions	Land Use or Other Indirect Effects	Total
L-CNG from LFG	CNG034	2B Application*: Texas landfill gas to pipeline-quality biomethane, delivered via pipeline, liquefied in AZ; transported by trucks to California; re-gasified and compressed to L-CNG in CA	27.85	0	27.85
LNG from LFG	LNG027	2B Application*: Texas landfill gas to pipeline-quality biomethane; delivered via pipeline; liquefied to LNG in AZ; transported by trucks to California	27.45	0	27.45

* Specific Conditions Apply.

Operating Conditions

1. Actual pathway energy consumption values shall remain at or below the levels specified in ANGF application. These pathways were calculated using LFG production data covering April 2012 through March 2014 and LNG liquefaction and CNG compression data covering calendar years 2011 and 2012. The recovery and processing efficiency levels at the McCarty Road Landfill in Houston, Texas shall remain at or above the levels specified in the ANGF application. In addition, the liquefaction efficiency at the Topock LNG plant shall remain at or above the levels specified in the application.
2. Because the biomethane supplied under this pathway is commingled with fossil natural gas both when it enters the interstate pipeline system and when it enters ANGF Topock liquefaction facility, ANGF must maintain an accounting system that will enable it to demonstrate unequivocally at any time that every unit of biomethane-based transportation fuel sold and reported under the LCFS can be associated with an equal unit of biomethane purchased from the McCarty Road Landfill.

Staff Analysis and Recommendations

Staff has reviewed ANGF McCarty application for the production of L-CNG and LNG from LFG originating in Houston, Texas. Staff has replicated, using the CA-GREET1.8b spreadsheet, the CI values calculated by ANGF. ANGF has provided documentation in support of the key components of its pathways: energy consumption at the Texas LFG processing plant and the Arizona liquefaction plant. It has also provided the volumes of LNG and CNG produced. Staff is satisfied that the energy consumption levels reported in ANGF application accurately represent actual usage for the time period for which records were submitted, and that Applied is capable of maintaining CIs that are at or below those shown in the table above. Therefore, staff recommends that ANGF Method 2B application for LFG-to-LNG and LFG-to-L-CNG pathways be certified, subject to the operating conditions set forth in this staff summary.